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www.epa.gov/nhsrc

National Homeland Security Research Center

Advancing Our Nation's Security Through Science

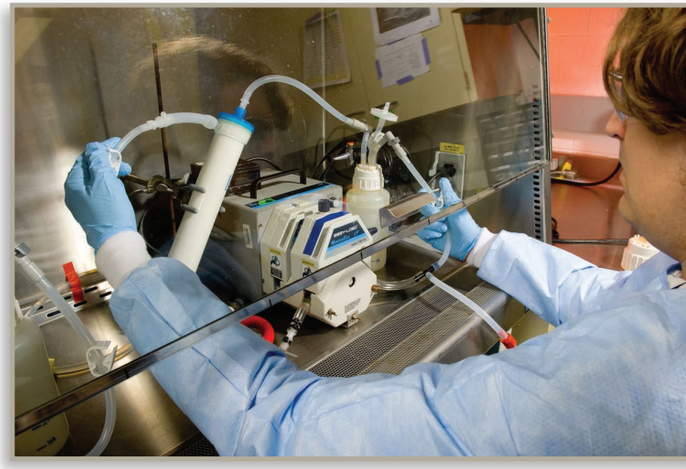
Office of Research and Development
National Homeland Security Research Center

The National Homeland Security Research Center

As part of USEPA's Office of Research and Development, the National Homeland Security Research Center (NHSRC) provides products and expertise to improve our nation's ability to respond to and recover from environmental contamination caused by terrorist attacks on our nation's water infrastructure, buildings and outdoor areas.

NHSRC conducts and reports on research related to

- Detecting and containing contamination from chemical, biological and radiological agents
- Assessing and mitigating exposure to contamination
- Understanding the health effects of contamination
- Developing risk-based exposure advisories and contamination cleanup goals
- Decontaminating and disposing of contaminated materials



NHSRC has developed a field-portable water sample ultrafiltration device that concentrates pathogens, thus increasing the likelihood of detecting them.

EPA's rotary kiln incinerator simulator is used by NHSRC to investigate the destruction of contaminated building materials.

For additional information, visit our web site at www.epa.gov/nhsrc or email nhsrc@epa.gov

NHSRC works closely with a variety of stakeholders and experts to develop products that include

- Standardized analytical methods for use by a nationwide network of federal and state laboratories following a terrorist attack
- Research on contamination warning systems for water utilities
- Models which integrate existing public health surveillance data and drinking water quality measurements
- Methods and technical support for treatment, decontamination and disposal of contaminants and debris
- Technology testing and evaluation reports
- Research on effective risk communication

How NHSRC Does Its Work

NHSRC works closely with other scientists, engineers and government agencies, as well as security specialists, public health officials, industry leaders and emergency responders to:

Help detect and limit contamination by

- Developing models that predict how contamination spreads in buildings, outdoor environments and drinking water distribution systems
- Researching exposure advisory levels for resumed use of water resources and re-entry into facilities and outdoor areas
- Developing, compiling and verifying standardized sampling and analytical methods used to define the extent of contamination or the effectiveness of decontamination
- Evaluating reliable, real-time monitoring systems for detecting contamination in water and wastewater systems
- Developing software tools to assist water utilities in mitigating contamination incidents
- Creating computer-based tools for estimating potential damage to drinking water and wastewater systems from explosives
- Developing technologies that immobilize contaminants on surfaces

Help decontaminate by

- Developing cost-effective tools and procedures for containment, treatment, decontamination and removal of chemical, biological and radiological agents
- Providing the scientific basis for the development of risk-based cleanup goals
- Testing, evaluating and optimizing commercially available and emerging decontamination technologies
- Evaluating the impact of decontamination technologies on sensitive materials and electronics

Help dispose of contaminated materials by

- Identifying and reporting on the best practices for disposal of debris contaminated with chemical, biological and radiological agents
- Developing decision support tools to provide options for treatment and disposal of debris from homeland security incidents
- Evaluating techniques that support the remediation of water and wastewater, buildings and outdoor environments

Much of NHSRC's water related research can help water utilities detect, respond to and recover from contamination events.

The wind tunnel at the Research Triangle Park facility is used to study dispersion of contaminants.

NHSRC develops and tests various decontamination methods to determine how well they work and their effect on building materials and sensitive equipment. Tenting buildings contains the fumigant used to inactivate or destroy contaminants.